

CLAIMS

1. A reel (1) for winding or unwinding reelable, strip-shaped objects such as steel strips, comprising a support surface (2) that extends in the main as a cylinder, a hub (8) arranged to rotate about an axis (4) in order to allow rotation of the support surface (2) about said axis (4), an adjusting device (60) arranged to cooperate with the support surface (2) in order thereby to vary the diameter (D) of the support surface characterised in that the support surface (2) is arranged at a flexible element (20) consisting of a continuous circumferential piece and that the adjusting device (60) is arranged to affect said support surface (2) to alter its shape, whereby the diameter (D) of the support surface is varied.
2. A reel according to claim 1, characterised in that said support surface (2) all together constitutes at least 270° of the circumferential extension of said support surface (2).
3. A reel according to claim 1 or 2, characterised in that said support surface (2) comprises an axial through opening (5).
4. A reel according to claim 3, characterised in that said opening (5) has an extension (b) along the circumference of said support surface (2) that is proportional to a diameter variation (D1-D2) of the reel (1), so that $b = \pi(D1 - D2)$.
5. A reel according to any one of the preceding claims, characterised in that said adjusting device (60) comprises a force exerting device (6) that is arranged to affect the support surface with a force, the component force (F) of which being a chord in an imaginary circle the surface of which coincides with said support surface.
6. A reel according to claim 5, characterised in that the force exerting device (6) cooperates with at least one engagement means (H, H', 10, 10', 11, 11', 14, 14') that are connected to said flexible element (20) and where the engagement means are placed internally of said flexible element (20).
7. A reel according to claim 6, characterised in that the force exerting device (6) cooperates with said engagement means (H, H', 10, 10', 11, 11', 14, 14') by at least one pivotal attachment.

8. A reel according to any one of the preceding claims, characterised in that it comprises at least one support ring (3') provided with an opening (5'), which support ring is arranged internally of the support surface (2), where the support ring at least partially bears against an internal surface (21) of the flexible element (20), whereby the support ring (3') preferably is essentially parallel to a radial cross-section of the support surface (2).
9. A reel according to claim 8, characterised in that the support ring (3') is composed of at least one elongated shank (9, 9') and that it comprises said hub (8), and preferably said engagement means (H, H', 10, 10') that are connected to each other and preferably are integrated.
10. A reel according to claim 9, characterised in that the support ring (3') is arranged to run in a groove (7', 7'') on the inside of the flexible element (20), where the groove (7', 7'') is arranged in a plane that is essentially parallel to the direction of rotation of the reel.
11. A reel according to claim 10, characterised in that in a position in which the reel is completely expanded, the support ring (3') has a circumferential extension that is shorter than the circumferential extension of the support surface (2), and where a distance (s) from the end (90) of one shank to an edge (50) at the opening of the support surface is essentially equal to the extension (b) along the circumference of said support surface (2).
12. Method to regulate the diameter (D) of a reel (1) intended to be used in winding and unwinding of reelable, strip-shaped objects such as steel strips, where the method comprises to affect a support surface (2) by an adjusting device (60), which support surface is arranged at a flexible element (20), so that the shape of the support surface (2) is changed, whereby the diameter (D) is varied.